OBJECTIVES: This research explored the feasibility of using mobile technology (mHealth) to capture data such as resource utilisation and patient reported outcomes to support the market access of new products. The main objectives were to understand best practices in engaging end users to optimise data collection, and to explore payer opinions on the validity of using mHealth for data collection and its usefulness in the decision making process. **METHODS:** Secondary research was conducted to identify best practices in optimising end user engagement with mHealth solutions. Studies that led to successful outcomes were analysed in detail to understand the key engagement success factors. Qualitative primary payer interviews were conducted in several key European markets to understand the validity of using mHealth to collect data including perceived challenges of leveraging this data to support market access decisions. **RESULTS:** Research showed that interventions that are personalised through data, analytics and behaviour change methodologies are most successful in engaging end users when using mHealth. Payers highlighted several key concerns of using mHealth; namely, data quality and sustainability/scalability. These concerns should be considered and addressed by health care companies who wish to use mHealth as a data platform to support payer decisions. **CONCLUSIONS:** mHealth is a tool that holds promise for many different parts of the health care value chain. This includes leveraging mHealth to support the market access targets of new products, by collecting and using data to enhance the communication of the products' value. The findings from this research highlight best practices to engage users in order to optimise data collection as well as provide insights from payers on the key concerns of doing so.

PRM169

THE INFLUENCE OF HAQ UTILITY MAPPING ALGORITHMS ON THE COST-EFFECTIVENESS OF SECOND LINE BIOLOGICS FOR TREATMENT OF RHEUMATOID ARTHRITIS

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OBJECTIVES: In 2010, the National Institute for Health and Clinical Excellence (NICE) performed a multiple technology assessment for second line biologic treatments (following the failure of a TNF inhibitor and disease modifying anti-rheumatic drugs (DMARDs)) for the treatment of rheumatoid arthritis (RA). The Birmingham RA Model (BRAM) was used to obtain incremental cost-effectiveness ratios (ICERs) of £21,100/quality-adjusted life year (QALY) for rituximab versus DMARDs and £130,600 for abatacept versus rituximab. Adalimumab, etanercept and infliximab were dominated by rituximab. NICE recommended rituximab, unless contraindicated, in which case all the other biologics were recommended. The BRAM used in the NICE assessment used a linear regression model to translate Health Assessment Questionnaire (HAQ) scores into EQ-5D scores, however other algorithms exist. The objective of this study was to understand how the algorithm used to map from HAQ to EQ-5D affects the ICERs generated by the model. **METHODS:** The BRAM used in the NICE assessment used a linear regression model to translate Health Assessment Questionnaire (HAQ) scores into EQ-5D scores, however other algorithms exist. The objective of this study was to understand how the algorithm used to map from HAQ to EQ-5D affects the ICERs generated by the model. **RESULTS:** The ordering of the effectiveness of treatments did not change with the mapping algorithm used, however there was substantial variation in the magnitude of the ICER. The ICER for rituximab versus DMARDs varied from £21,594/QALY to £32,039/QALY depending on the exact algorithm used. The ICER for abatacept versus rituximab varied from £124,776/QALY to £167,687/QALY. **CONCLUSIONS:** The cost-effectiveness results of the BRAM are heavily influenced by the choice of mapping algorithm. In future modelling, the choice of algorithm should be justified, and appropriate sensitivity analyses presented. Further research is needed to identify the most appropriate algorithm(s) for use in health technology assessment.

PRM170

USING RASCH ANALYSIS TO CO-CALIBRATE SCORES FROM OUTCOME MEASURES SPECIFIC TO ASTHMA (ALIS), CHRONIC OBSTRUCTIVE PULMONARY DISEASE (LCOPD) AND PULMONARY HYPERTENSION (CAMPHOR)

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OBJECTIVES: Disease-specific patient-reported outcomes (PROs) are designed to be highly relevant to a single disease. It is widely believed that comparisons of outcomes between patients with different diseases is only possible using generic PRO measures. The present study employs a novel method of using Rasch analysis to co-calibrate scores from different disease-specific PROs allowing scores to be compared across diseases. **METHODS:** Three samples of patients completed the Asthma Life Impact Scale (ALIS), the Living with COPD scale (LCOPD) or the Cambridge Pulmonary Hypertension Outcome Review (CAMPHOR), depending on their illness. Each scale utilises the needs-based model of QoL and the scales share 8 common items. The three samples were analysed separately for fit to the Rasch model and then combined and re-analysed. **RESULTS:** The ALIS was completed by 140 asthma patients (mean age=50.6, males = 29.3%); the LCOPD by 162 COPD patients (mean age=69.3, males = 43.8%) and the CAMPHOR by 91 patients (mean age=52.6, males = 29.7%). Each of the scales fit the Rasch model individually (ALIS $Chi^2 = 0.05$; LCOPD $Chi^2 = 0.32$; CAMPHOR $Chi^2 = 0.92$). The combined dataset also fit the Rasch model at first run ($Chi^2 = 0.24$). One common item showed misfit ($Chi^2<0.001$) and non-uniform differential item functioning (DIF) by disease ($Chi^2<0.001$). This item was removed from the analysis and the final co-calibrated scale showed good fit to the Rasch model ($Chi^2=0.48$) with minimal DIF by age, gender or disease. **CONCLUSIONS:** The results showed that it was possible to co-calibrate scores on the ALIS, LCOPD and CAMPHOR. As disease-specific measurement has advantages over generic assessment related to relevance and reproducibility, the results have the potential to enhance PRO measurement in respiratory research.

PRM171

THE E-HEALTH IMPACT QUESTIONNAIRE: DEVELOPING A TOOL TO MEASURE THE EFFECTS OF USING HEALTH-RELATED WEBSITES

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OBJECTIVES: The internet is a valuable resource for accessing health information and support. This study aimed to develop a tool (the eHIQ) to measure the impact of using health-related websites which contain experiential and factual information. **METHODS:** A multi-method study with four stages. Stage 1: Themes concerning the impact of using health-related websites were identified through qualitative secondary analysis of interviews exploring patient and carer experiences of health and a relevant literature review. Stage 2: Questionnaire items based upon identified themes were constructed and assessed using expert and patient opinion. Stage 3: Items were administered online and subjected to exploratory factor analysis. Stage 4: The reduced questionnaire and appropriate reference measures were administered online to test convergent validity and external reliability. **RESULTS:** Sixty-seven items were constructed according to the key themes identified through relevant literature and qualitative analysis. Following expert and patient refinement, two independent item pools were entered into psychometric testing. The first item pool (eHIQ-Part 1) related to general views of using the internet in relation to health and second item pool (eHIQ-Part2) related to the impact of using a specific health-related website. Analysis confirmed three domains present in eHIQ-Part 1 and six domains present in eHIQ-Part 2. These domains were tested further during Stage 4 and were found to have high convergent validity, internal consistency and good test-retest reliability. **CONCLUSIONS:** Developing the eHIQ through the use of qualitative analysis and patient-expert opinion enhanced face and content validity. The eHIQ demonstrates good psychometric properties and will enable the measurement of the effects of using health-related websites across a range conditions.

PRM172

DESIGN OF LUPUS IMPACT TRACKER (LIT) VALIDATION STUDY IN FIVE EUROPEAN CLINICAL PRACTICE SETTINGS

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OBJECTIVES: Physicians treating systemic lupus erythematosus (SLE) use a variety of tools to monitor disease activity and organ damage however these do not capture the functional burden experienced by patients. Studies suggest that communication between physicians and patients need to be optimized. The Lupus Impact Tracker (LIT), a brief, disease specific 10-item patient reported outcome tool, was developed to assess the impact of SLE on patients daily functioning and well-being. This study aims to evaluate the cross-cultural validity, acceptability and feasibility of the LIT in European clinical practice settings. Potential effect of LIT on communication during the consultation will also be assessed. **METHODS:** This is a prospective, observational, multicenter cross-sectional validation study of SLE patients on standard of care from hospital/clinical settings in five European countries (France, Germany, Italy, Spain and Sweden). 625 patients enrolled to obtain at least 500 evaluable cases irrespective of disease severity. Before the visit, patients will complete self-reported questionnaires: SF-36, Global Evaluation of Change (GEC), care satisfaction and LIT. During visits, physicians will record patient data, assess disease activity using the SELENA-SLEDAI and Physician Global Assessment (PGA), and disease damage using the SLICC/ACR damage index. After the visit patients and physicians complete LIT feedback questionnaires. Analyses will be performed using descriptive statistical methods with no specific hypothesis suggested. **RESULTS:** Psychometric evaluation of LIT in US clinical settings found the tool reliable and valid. Evaluation for use in European clinical practice settings is thus needed. Cross-cultural validity of LIT across countries will be analyzed using differential item functioning (DIF) analysis. Data from the Lupus Impact Tracker-(Patient and Physician) Feedback Questionnaires will be tabulated and summarized. **CONCLUSIONS:** We need improvement of the patient/physician interaction in lupus care. The LIT may be a valid and acceptable tool for use with SLE patients in European clinical practice settings.

PRM173

DEVELOPMENT OF A QUESTIONNAIRE TO EVALUATE FOOD-RELATED WELL-BEING

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OBJECTIVES: To screen food-related products and support allegation demands, evaluating food-related concepts with appropriate tools is essential. In the absence of such a tool, we developed a specific questionnaire providing insight into the way a person links food to well-being in terms of pleasure, joint comfort, digestive comfort, prevention and immunity. **METHODS:** Semi-directive interviews were conducted with 40 healthy subjects to explore three themes: food, well-being and food-related well-being, and determine the basis of the interview guide for focus group discussions. Twenty-four group discussions (199 subjects in total) were conducted with healthy subjects (n=12) and subjects with joint, digestive or repetitive infection complaints (n=4 per complaint), to investigate definition and experience of food-related well-being. Qualitative analysis was performed to identify concepts of interest. Based on the designed conceptual model and discussion with the scientific committee, items were generated using subjects' verbatim expression. Face-to-face cognitive interviews were conducted with 29 healthy subjects to ensure comprehension and appropri-